# A CRITICAL STUDY OF ORGANIZATIONAL LEARNING PROCESS AND PRACTICES IN DURGAPUR STEEL PLANT, DURGAPUR

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## Abstract

Organizational learning has been proposed as a development process, from individual to group to organizations. The concept of organizational learning and learning organization originated in the 1960s but proliferated only during the last thirty years. Its practices involve diversified perspectives of organizational management and recognize a wide range of variables determining the learning results, such as the organizational absorptive capacity, problem-solving ability, employee participation, learning environment, etc. Today organizations not just implement various mechanisms of learning in their organizations but also like to check their effectiveness.
This paper is an empirical study of the extent (inception and implication) of organizational learning in one such organization- DURGAPUR STEEL PLANT, Durgapur

**Keywords:** Organizational Learning, Human resource management, POLI scores

## INTRODUCTION

Globalization, changes in the economy, the diverse workforce environment, and use of information technology have made organizations pursue learning as a competitive advantage .It will not be an exaggeration to say that from the formula fifties, sensitive sixties, strategic seventies, excellence eighties and nanosecond nineties, it is learning in the twenty-first century. Notions of organizational learning - the process of acquiring, distributing, integrating, and creating information and knowledge among organizational members (Dixon, 1992; Huber, 1991)- gained prominence in the nineteen fifties when they were thrown into an ongoing debate between behaviorists and economists. Economic models of the firm had become dominant during and after WWII, yet many researchers, especially those with a behaviorist orientation, were dissatisfied with those models. Behaviorists such as March, Simon, and Cyert attacked the classical economic theory of the firm on the grounds that its models were overly simplistic and contradicted empirical evidence. The theme of organizational learning was studied by Mary Parker Follet et al. in 1960. The most important study on the organizational concept and the cooperation of its components began in 1963, with Richard Cyert and James March's work, and after that the term organizational learning appears for the first time in a Miller and Cangelloti's publication, based on contingency theory. However the concepts of organizational learning and learning organization did not get much popularity till 1980s or even till 1990s. A few works contributed positively to open up the debate of organizational learning and subsequently the popularity of the concept. These include Argyris and Schon's (1978) double-loop learning notion, Senge's (1990) the 'Fifth Discipline' and Pedler, Burgoyne & Boydell (1991) learning company model. Today, the concept of organizational learning and learning organisation has flourished and been defined in a wide range of literature (Levitt & March, 1988; Senge, 1990; Cohen & Sproul, 1991; Argyris & Schon, 1996). Every organization has realized the vital importance of learning in their organizations and has been emphasizing on one dimension or other of organizational learning. In most of the organizations its practices involve diversified

perspectives of organizational management. They recognize a wide range of variables determining the learning results, such as organizational absorptive capacity, problem-solving ability, employee participation, learning environment, etc. Notwithstanding inculcating the principles of learning in organization, it is equally important that organizations regularly take feedback from their managers to check the effectiveness of the process and take corrective action had if there is any lacuna. Several instruments have been, accordingly, developed by various researchers and interventionists from time to time for measuring extent and effectiveness of organizational learning including DiBella's Organization Learning Inventory, Cavaluzzo's Learning Advantage, Ramnarayan's Organization Learning Climate Questionnaire, Deshpande and Pendse's three questionnaires on Learning Organizations and Guns's F10 Foundations, an instrument on faster learning organizations. In this study the researcher has used the Organizational Learning Diagnostic Survey (Pareek, 1988) consisting of 23 items to measure the extent and effectiveness of organizational learning principles in Durgapur Steel Plant, Durgapur.

## LITERATURE REVIEW

Organizational learning can be conceived as having three sub-processes: creating, retaining and transferring knowledge. When organizations learn from experience, new knowledge is created in the organization. The knowledge can be then retained so that it exhibits some persistence over time. Knowledge can also be transferred within and between units. Through knowledge transfer, one unit is affected by the experience of another (Argote and Ingram, 2000) or learns vicariously (Bandura, 1977) from the experience of other units. Before the late 1980s, research on organizational learning flowed in three streams with little co-mingling of their waters. One stream of research illustrated how defensive routines prevent learning (for example see Argyris and Schon, 1978). This work, which was primarily psychological, relied mainly on clinical case studies. Another stream of research, whose source was in the work of Cyert and March (1992), conceived of learning as changes in the organization's routines, which affect future behavior. This work, which was sociological, relied mainly on simulations to develop theory. A third stream of research in the 'learning curve' tradition examined how characteristics of performance such as errors or costs changed as a function of experience (Dutton and Thomas, 1984). This work, which was conducted mainly by economists and industrial engineers, relied on archival field studies to estimate rates of learning. Although research in each stream has continued since the late 1980s, a co-mingling of the streams has occurred to some extent (Argyris, 1996; Miner and Mezias, 1996). This co-mingling as well as the outpouring of research on organizational learning that has occurred in the last 20 years produced a large river of research on organizational learning that is wide and has several deep currents

The construct of organizational learning has been articulated for more than 40 years, and scholars have acknowledged that the concept was first mentioned by March and Simons in 1958 (Casey, 2005). With the speed of technological change, advances of globalization, and growing corporate competition, the field of organizational learning has grown rapidly in the 1990s (Dodgson, 1993; Easterby-Smith, Snell, & Gherardi, 1998). The concept of organizational learning has not only attracted the attention of scholars from disparate disciplines but also consultants and managers in the business world (Chiva & Alegre, 2005). It is because the concept of learning provides insights to firms that face uncertain and changing circumstances (Dodgson, 1993). However, with the emerging importance of organizational learning, there seems to be little agreement on the definitions, processes, and models in this field (Lundberg, 1995). A consequence of this is that diverse disciplinary perspectives are presented in the

literature on organizational learning (Easter by-Smith, 1997). Therefore, Dodgson (1993) has emphasized that it is important to use a multi-disciplinary approach to fully understand the complexity and variety of organizational learning literature. Easterby-Smith (1997) has identified various disciplines that contribute to organizational learning, including psychology and organization development, management science, sociology and organization theory, strategy, production management, and cultural anthropology. One noticeable debate in the literature is whether scholars should try to move toward a single integrated framework or acknowledge that diverse disciplinary perspectives exist (Easterby-Smith & Araujo, 1999). Since a number of scholars have recognized that there is more than a single framework or model in understanding organizational learning process, researchers have tended to map many facets of organizational learning and developed integrative conceptual frameworks. Lipshitz, Popper, and Friedman (2002) have stressed that organizational learning should be explicated more than the cognitive perspective, which has been a dominant focus in the literature. It is because organizational learning produces and changes the learning in culture, structures, policy, and norms aspects. Hence, Lipshitz, Popper, and Friedman (2002) have integrated five facets: structural, cultural, psychological, policy, and contextual, to build their organizational learning conceptual framework.

## ORGANIZATIONAL PROFILE

Durgapur Steel Plant (DSP), a subsidiary of Steel Authority of India Limited (SAIL),is the nerve centre of the Asansol-Durgapur industrial belt. It is the largest industrial unit in Durgapur-Asansol Belt of West Bengal, third integrated plant of the then Hindustan Steel Limited to come under Public sector in India. It has played a historical part in the industrial development of India. Initiated during the 1950s, Durgapur Steel Plant changed the face of India, bringing within a lot of technical and industrial growth for the country as a whole. Durgapur Steel Plant was built with the help from Consortium of British Firm, ISCON. The plant started in 1960 with an initial capacity of 1.0 MT/ annum (MTPA). The capacity was extended to 1.6 MTPA in late sixties with an additional investment of Rs. 67.83 crores. Later in the early eighties, British Steel Corporation, MECON and the Japanese Iron and Steel Federation were entrusted with the job of making a developmental plan for Durgapur Steel Plant. Based on their findings, SAIL decided to modernize DSP with a final Government approved definite cost of Rs. 2668 crores in1989 which later escalated to more than 4500 crores. Witnessing the massive modernization programmes, DSP scripted a success story for all the organizations to emulate. The present capacity of the DSP is 1.802 MTPA. Covered under ISO 9001: 2000 quality management system, Durgapur Steel Plant today is extremely well equipped and is stuffed with all the state-of-the-art technology required for quality steel making. The Durgapur Steel Plant has also played a major role in encouraging small-scale industries. A total of 196 small-scale industries are registered with the plant, out of which 29 have been accorded ancillary status. Besides modernization, technological up-gradation and rationalized man force, one thing that has greatly scripted the success story of the plant is the religious implementation of Human Resource Development Practices in its premises. Instead of mere rechristening of its personnel department, the plant established a separate Centre for Human Resource Development Department for the implementation of specific and well carved out HRD policies. The result had been a congenial climate, decreased labor turnover, increased productivity and a success story to emulate.

## PURPOSE OF THE STUDY

The 23-item Organizational Learning Diagnostics (OLD) questionnaire developed by Udai Pareek has been used to know about the level of learning potential and discover which dimensions are strong and weak so that remedial actions can be taken.

## RESEARCH METHODOLOGY

**Design/methodology/approach** – The sample of the study comprised of managers of DURGAPUR STEEL PLANT, Durgapur. A total of 82 senior managers were surveyed through a 23-item structured questionnaire from the firms.

## ABOUT THE INSTRUMENT

Organizational Learning Diagnostics (OLD) Scale (Pareek, 1995) is a 23-item scale, which provides a diagnostic insight into the organizational learning practices of an organization. It has a five-point rating scale in the categories ranging from 'very low or no value' to 'very highly valued'. The scale's reliability was assessed through Cronbach's coefficients alpha. The reliability of study variable is 0.93, which is acceptable (Hair et al., 1998).

Two dimensions are assessed by the OLD: Organizational-learning subsystems or phases and OL mechanisms. The instrument asks managers to rate 23 mechanisms on a 5-point scale. These mechanisms are grouped into 3 subsystems: acquiring and examining (the innovation phase), retaining and integrating (the implementation phase), and using and adapting (the stabilization phase). These are subsystems of OL in the sense that they are present in an organization in varying degrees and are interrelated with a feedback-loop. The OLD contains eight, seven and eight mechanisms, respectively, for the three subsystems or phases.

Furthermore, all 23 items have been grouped into 5 categories of OL mechanisms: experimentation and flexibility, mutuality and team work, contingency and incremental planning, temporary systems, and competency building.

## SCORING AND INTERPRETATION

The 23 items are grouped first in three columns representing the 3 subsystems. Then five other columns, which represent five categories of OL mechanisms, include the items that relate to the specific categories. The score of each item is written on the scoring sheet.

The scores in each column are totaled, and each total is written on the "total" line. Then each total is multiplied by 25, and the product is written in the appropriate blank. Each product is then divided by the number that is printed beneath it, and the quotient is written on the "POLI" (Potential for Organizational Learning Index) line. Multiplying by the fraction makes the scores comparable for all columns, and each column will range from 0 to 100. POLI scores from each column are added together and a mean value is calculated for each columns.

Higher score for any dimension indicates greater attention being paid to organizational learning in that dimension. Lower score indicates attention lacking in that dimension.

## ANALYSIS AND INTERPRETATION

Organizational learning, we know, is a continuous process that involves three phases-innovation, implementation and stabilization.

Innovation is concerned with exposure of the organization to a new idea or practice. The POLI (Potential for Organizational Learning Index) score for the Innovation has been found out as 37.80 which are quite decent. This shows organization is neither stagnant nor is following reckless practices. Rather it is acquiring the new input reflecting on its cost and benefit. The score further signifies the quest of the managers for new ideas, innovative practices.

Any and every innovation, irrespective of novelty or attractiveness is futile if it is not implemented and accepted by the employees. Implementation, therefore, is the next stage in the Organizational Learning phase. The POLI score for implementation phase is 39.68. The score indicates phase-wise implementation in the organization rather than arbitrary implementation. It shows that organization is integrating and retaining the new inputs briskly.

Stabilization or consolidation is the last phase which is the most important phase for any organization that has innovated and implemented organizational learning. Many an organization start something novel put it into action but fails to pursue it for long. In other words while the intention is novel, implementation is intense; persistency often lacks and the process die in its nascent stage. It is wisely said that even if you are ahead till ninety-ninth distance of a race, you are not successful till you complete the race victoriously. The importance of stabilization, thus, could never be exaggerated. The stabilization itself is a continuous process and is carried on phase-wise. The POLI (Potential for Organizational Learning Index) score for the Stabilization has been found out as 39.67. This score too falls under the satisfactory zone. Besides the consistency of scores for the three phases is a testimonial of the synchronized effort the organization is putting for the learning environment.

For an effective learning to take place, successful phase must be complimented with effective mechanisms namely experimentation and flexibility, mutuality and team work, contingency and incremental planning, temporary system and competency building.

The POLI score of 38.61 for experimentation and flexibility that measures the extent to which organization has developed flexibility and positive attitude toward experimentation is satisfactory though not excellent and the organization may look to improve it through participation or decentralization.

The POLI score of 38.97 for mutuality and teamwork that measures the extent to which organization has developed mutual support, mutual respect, learning from one another, and effective team to solve problems is again a good one. The moderate score also indicates absence of dysfunctional social inhibition and group-think.

The POLI score of 32.82 for contingency and incremental planning however is bit low and needs extra effort.

Temporary systems include task forces, task groups, special committees that take quick action on a specific issue. The abundance and scarcity both hinders the learning process. The POLI score was found to be 39.68 that are sufficient to laud the organizational learning mechanism.

Competency building is the final mechanism that characterizes the resource building prowess of organization when needed. A score of 39.43 is indicative of a sound organization however leaves it with scope to improve.

## FINDINGS

The paper finds that the organizational learning, which largely gets reflected through various phases and mechanisms, is in sound and prospering state and based on the POLI scores for the three phases and five mechanism it can be concluded that DURGAPUR STEEL PLANT, Durgapur is a learning organization where people are continually expanding their capacity to

create the results they truly desire, where new and expansive patterns of thinking are getting nurtured, where collective aspirations are set free and where people are continually learning how to learn together.

## FUTURE SCOPE AND LIMITATIONS

Managers can use the instrument to discuss in small teams (based on different learning organization processes) those items which lower the score. They can then discuss ways of improving those aspects. The scores can be compared inter departmentally as well as intra departmentally by conducting simultaneous studies in various units.

However the scores need to be interpreted judiciously considering the low sample size. The paper has shown results obtained from fewer samples from HR managers and Line managers only. Nevertheless, they are reflective of the learning environment in the organization, inclusion of employees from all the functions could have made the study more interesting. Further a longitudinal study spanning over a few months would give much better result.

**Originality/value** – This paper will be useful to all type of business organizations looking for innovating and expanding in employees, besides contributing to the understanding of organizational learning in present day global HR context.

## ANNEXURE

**Reliability Statistics**

| Cronbach's Alpha | N of Items |
|---|---|
| .930 | 23 |

| PHASES | | | | | | MECHANISMS | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Innovation** | | **Implement-ation** | | **Stabilization** | | **Experimentation** | | **Mutuality** | | **Planning** | | **Tempor ay System** | | **Competency** | |
| Item No | Rating | Item No | Rating | Item No | Rating | Item No | Rating | Item No | Rating | Item No | Rating | Item No | Rating | Item No | Rating |
| 1 | 137 | 9 | 124 | 16 | 131 | 1 | 137 | 1 | 137 | 10 | 132 | 9 | 124 | 1 | 137 |
| 2 | 137 | 10 | 132 | 17 | 134 | 4 | 114 | 3 | 105 | 12 | 120 | 11 | 131 | 2 | 137 |
| 3 | 105 | 11 | 131 | 18 | 131 | 5 | 124 | 6 | 121 | 13 | 146 | 14 | 131 | 6 | 121 |
| 4 | 114 | 12 | 120 | 19 | 133 | 6 | 121 | 7 | 125 | 14 | 131 | 16 | 131 | 7 | 125 |
| 5 | 124 | 13 | 146 | 20 | 133 | 7 | 125 | 8 | 129 | 17 | 134 | 18 | 131 | 8 | 129 |
| 6 | 121 | 14 | 131 | 21 | 133 | 8 | 129 | 9 | 124 | 18 | 131 | 19 | 133 | 15 | 127 |
| 7 | 125 | 15 | 137 | 22 | 125 | 9 | 124 | 11 | 131 | 20 | 133 | | | | |
| 8 | 129 | | | 23 | 126 | 11 | 131 | 14 | 131 | 21 | 125 | | | | |
| | | | | | | 17 | 134 | 16 | 131 | 22 | 128 | | | | |
| | | | | | | 22 | 128 | 17 | 134 | 23 | 126 | | | | |
| | | | | | | 23 | 126 | 19 | 133 | | | | | | |
| | | | | | | | | 20 | 133 | | | | | | |
| ∑ | 992 | 911 | | 1041 | | 1393 | | 1534 | | 1076 | | 781 | | 776 | |
| ii | 24800 | 22775 | | 26025 | | 34825 | | 38350 | | 26912 | | 19525 | | 1940 | |
| iii | 8 | 7 | | 8 | | 11 | | 12 | | 10 | | 6 | | 6 | |
| iv | 37.8 | 39.68 | | 39.67 | | 38.61 | | 38.97 | | 32.82 | | 39.68 | | 39.43 | |

**Descriptive Statistics**

| | N | Sum | | N | Sum |
|---|---|---|---|---|---|
| VAR00001 | 82 | 137 | VAR00013 | 82 | 146 |
| VAR00002 | 82 | 137 | VAR00014 | 82 | 131 |
| VAR00003 | 82 | 105 | VAR00015 | 82 | 127 |
| VAR00004 | 82 | 114 | VAR00016 | 82 | 131 |
| VAR00005 | 82 | 124 | VAR00017 | 82 | 134 |
| VAR00006 | 82 | 121 | VAR00018 | 82 | 131 |
| VAR00007 | 82 | 125 | VAR00019 | 82 | 133 |
| VAR00008 | 82 | 129 | VAR00020 | 82 | 133 |
| VAR00009 | 82 | 133 | VAR00021 | 82 | 125 |
| VAR00010 | 82 | 132 | VAR00022 | 82 | 128 |
| VAR00011 | 82 | 131 | VAR00023 | 82 | 126 |
| VAR00012 | 82 | 120 | **Valid N** | **82** | |

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